

APPENDIX 12—MANAGING WILD HORSE POPULATIONS IN THE RAWLINS RMPPA

The Bureau of Land Management (BLM) monitors the wild horse population to ensure that the population meets the population management objectives set in the land use plan. Monitoring of the habitat and the wild horses has been ongoing within the Herd Management Areas (HMA) for several years and has included some of the following methods and approaches:

- Precipitation data
- Rangeland trends (primarily on uplands)
- Forage utilization data
- Licensed use by livestock grazing allotment
- Wildlife actual use and forage requirements
- Wild horse population data, including, but not limited to the following:
 - Population counts
 - Reproductive rates
 - Age/sex structure
 - Actual use sightings
 - Determining areas of highest horse use, or concentration areas

If an evaluation of monitoring data were to indicate that wild horse management objectives in the land use plan were not being met, population adjustments in land use plans and Herd Management Area Plans (HMAP) could be necessary. Population adjustments would be analyzed prior to initiating maintenance actions in applicable HMAPs and Resource Management Plans (RMP). Monitoring and adjusting the Appropriate Management Level (AML), as necessary, would ensure a thriving natural ecological balance is maintained.

More information on specific management techniques used in managing wild horse populations and the nature of the horses being managed can be found in the *Rawlins Field Office Wild Horse Management Handbook*. This document is an assemblage of all relevant policy and technical guidance that must be considered in developing and implementing wild horse management plans and actions. The handbook is available for review at the BLM Rawlins Field Office, 1300 North 3rd Street, Rawlins, Wyoming.

ESTABLISHMENT AND MODIFICATION OF HORSE MANAGEMENT AREAS AND LEVELS

The current AMLs were established in 1994 from a process that included 5 years of focused, intensive monitoring; evaluation of data; public input; and environmental analysis. Since that time, some boundary adjustments and realignments to the HMAs have been made via the Land Use Plan (LUP) maintenance process.

AML/Population Expression in the Rawlins Field Office

The existing AMLs in the Rawlins Field Office are expressed as the number of adults and yearlings, not including unweaned colts of the year. This definition was included in the 1994 AML evaluation and decision. At the time of the development of these numbers, customary primary inventory times were in the late winter or very early calendar year (typically February or March). The colts of the previous year had perished or survived to approach their first birthday, and the colts of the year had not yet been born.

Thus, the number counted represented what the adult population would be for the following year. Lately, there has been a shift in inventory times to favor the month of July. When a herd is counted at this time, most of the colts of the year have been born and many are 2 months of age or older. Thus, an inventory of the same herd in the same calendar year will yield a higher number, barring some unusual late winter event resulting in unusually high mortality. Inventory practices are under review pursuant to the Consent Decree with the State of Wyoming. Inventory practices may be standardized and any such standardization could well include a uniform method of expressing objective and existing populations. Increased interest in the genetic character of a particular herd has caused some differing views on the expression of population sizes and objectives. Geneticists usually define a population in terms of the effective population (N^E) that consists of the number of competent breeding age animals; therefore, colts of the year, yearlings, a portion of the 2-year olds, and the very old would not be included as part of the effective population count. The AML necessary to maintain an effective breeding population of 100 would be about 165 adult animals, not including unweaned colts. The exact number would vary depending on the age/sex distribution of the particular herd involved.

To change the AMLs and the upper and lower limits associated with the AML to a format that would reflect the above-discussed competent breeding age approach would require adjustments in AML for the Rawlins Management Plan Planning Area (RMPPA) (see HMA Lost Creek (Alternative 3) in Table A12-1). The table also shows the relationship between AML numbers and post-foaling populations of wild horses.

Table A12-1. Relationship Between AML and Wild Horse Populations

HMA	Population Pre-Foaling ¹			Population Post-Foaling ²		
	AML	Upper Limit	Lower Limit	At AML ²	At Upper Limit	At Lower Limit
Adobe Town	700	812	588	812	942	682
Stewart Creek	150	177	123	177	209	145
Lost Creek (Alternatives 1, 2, & 4)	70	83	57	83	98	68
Lost Creek (Alternative 3)	165	195	135	195	230	160
<p><i>Notes:</i></p> <p><i>1 This number includes adult horses and yearlings, not including unweaned colts. This is the definition of appropriate management level included in the 1994 AML evaluation and decision. This definition of AML is conducive to wild horse inventories completed in late winter (February/March), because much of the winter mortality would have already occurred.</i></p> <p><i>2 This number represents the total wild horse population being managed at AML following foaling. Because unweaned colts are not considered in the AML, the total wild horse population may be higher than the AML, although the population is still considered meeting the AML. This number is conducive to wild horse inventories completed in late summer (July/August), because many mares would have foaled, but some of the foals may not survive the upcoming seasons.</i></p>						

Population post-foaling, shown in Table A12-1, represents the total population, including all age classes, and represents the approximate population as of October 1 of a given year. To change the definition of the AML would be an implementation decision and, therefore, appealable.

IMPLICATIONS OF WILD HORSE GENETIC RESEARCH

Wild horses managed on the public lands have a variety of histories and originate from a variety of backgrounds. The genetic roots of most of the horses are predominantly American, and some have beginnings as recent as following World War II. Advances in genetic research have enabled the BLM to identify the specific genetic stock from which a wild horse population originates, thereby assisting in identifying the history of a population. Occasionally populations have been encountered in which their

genetic roots can be traced to the Spanish exploration period through the identification of genotypes associated with the New World Iberian (Spanish Colonial) breeds. Populations with this genetic similarity provide a genetic resource that the majority of wild horses on public lands do not provide. The wild horses in the Rawlins RMPPA Lost Creek HMA are such a population.

In 2001, blood samples from wild horses removed from the Lost Creek HMA were provided to Dr. E. Gus Cothran of the Equine Parentage Testing and Research Laboratory at the University of Kentucky. Results from the genetic analysis of these samples identified a clear contribution from New World Iberian breeds. The highest average genetic association of the blood samples provided was with these “Spanish Colonial” breeds. The next highest average genetic association was with North American Gaited breeds, most likely from the routine escape of domestic saddle stock from the surrounding areas. A full report of the results of this genetic analysis can be obtained from the Rawlins Field Office.

As genetic research continues with the wild horse populations throughout the Red Desert metapopulation, the necessity of maintaining the population of wild horses in the Lost Creek HMA in genetic isolation may vary. If populations adjacent to the Lost Creek HMA share the prevalence of New World Iberian genomes, intermingling these populations would be beneficial to maintain the genetic resource and isolating and maintaining an internally viable population in the Lost Creek HMA would not be required. However, if the New World Iberian genes are prevalent only in Lost Creek, further intermingling could cause this genetic resource to disappear. Continued monitoring and research may result in adjustments to management decisions for the Lost Creek HMA. Adjustments would be implemented following appropriate analysis and maintenance of management documents.

WILD HORSE MANAGEMENT HISTORY IN THE STATE OF WYOMING AND THE RAWLINS RMPPA

In 1971, in response to the passage of the Wild, Free-Roaming Horse and Burro Act, Wyoming BLM identified the existing wild horse habitats and populations in the state that would likely be subject to the provisions of the Act. These identifications were made using the best information and understanding available at the time. The result was 30 areas with populations totaling 4,411 horses. Of those, 1,049 were estimated to be privately owned horses that would be claimed and removed from the range under the provisions of the Act. Those 30 areas comprised a total of 6,557,160 acres of public lands, 389,112 acres of land owned by the State of Wyoming, and 2,479,096 acres of privately owned lands. The 30 areas varied greatly in size and land ownership.

As soon as the Act passed, a number of activities that had served to limit the growth in horse numbers and the expansion of their ranges ceased. Horse populations in Wyoming began to grow.

Almost immediately, BLM personnel began to accumulate additional information about the horses and their habitats. Area boundaries were refined as more was learned about the seasonal needs and habits of horses. By 1974 the list of 30 areas had increased to 40 areas comprised of a total of 6,820,749 acres of public lands, 406,103 acres of land owned by the State of Wyoming, and 2,355,852 acres of privately owned lands. The 40 areas varied greatly in size and land ownership.

The period of 1976 to 1984 saw a great deal of activity in land use planning. For Wyoming, this can be called the Management Framework Plan (MFP) era. During this period, the 40 areas previously identified were combined into 24 areas. The MFP process resulted in identifying 14 of those 24 areas that, in one way or another, failed to meet the suitability for maintaining a long-term healthy population of horses in accordance with the intent of the Act. The two most prevalent criteria were that the area contained significant amounts of private land and that the horse population was too small to continue to thrive when

isolated from customary sources of new genetic stock. The remaining 10 areas were then designated as HMAs. The HMAs comprised 3,322,776 public acres, 152,551 acres of land owned by the State of Wyoming, and 861,022 acres of privately owned land. This process also identified population objectives for these herds, totaling 2,673 horses.

Land use plans and the decisions that they generate are dynamic, adjusting in response to changing environmental conditions or new information. With respect to horses in Wyoming, this has resulted in the 16 HMAs currently recognized in Wyoming. These 16 areas comprise 3,664,002 acres of public land, 154,737 acres of land owned by the State of Wyoming, and 846,243 acres of privately owned lands. The 16 areas still vary in size and land ownership, though not to the extent that they once did. Particularly worthy of note is the significant amount of private land now included within designated HMAs. Much of the private acreage consists of land owned or controlled by the Rock Springs Grazing Association of southwestern Wyoming. It has made its lands available to an agreed-upon number of wild horses since 1979. Without access to those lands, approximately 1.5 million acres of adjoining and commingled public lands would be unavailable for inclusion in HMAs. This would, in effect, eliminate one-third of the free-roaming horses in Wyoming. The current, combined population objective (AML) for wild, free-roaming horses in Wyoming is 3,263. That is 18 percent more than it was in 1980. Without the access to the private lands noted above, the combined AML would be only 2,038.

As noted above, an effective breeding population of 100 horses is necessary to maintain a genetically viable herd of wild horses. Nine of the 16 HMAs in Wyoming do not have AMLs that would indicate genetically stable long-term populations. However, wild horse herds in these HMAs are usually part of a larger metapopulation comprising adjacent HMAs. The metapopulation is the entire gene pool available to a specific herd.

When originally identified and reviewed through planning, HMA boundaries were designated to reflect common herd location, as well as to simplify administration and management of wild horses. As a result, several HMAs may be designated adjacent to one another in different BLM Field Offices, or simply separated by geographic features such as watersheds. The individual populations in each HMA may be separated for most of the year, but both may share the same winter range. Sharing resources allows for regular interaction between the two populations. Interaction allows for horses from each herd to be recruited by and assimilated into the other. Thus, although the AML of the individual HMAs would appear to be genetically deficient, each population is periodically infused with new genetic material and the genetic diversity of both herds is enhanced. In any given year, only a very few bands from each herd may actually exchange members, but over time, the normal behaviors of each herd cause the mixing to become widespread.

From the standpoint of genetic viability, the required level of exchange of animals and the related introduction of new genetic material is not high. In small populations of less than 150 animals, the introduction of one or two competent breeding animals per generation (~10 years) will insure the maintenance of the genetic resource. To be members of a metapopulation, individual animals need not experience frequent, large-scale contact with one another.

Table A12-2 identifies the Rawlins RMPPA wild horse HMAs and the metapopulations in which the HMAs' horses interact.

Table A12-2. Wild Horse Regional Metapopulations Associated With the Rawlins RMPPA

Rawlins RMPPA HMAs		Metapopulation		HMA(s) in the Metapopulation	Type of Interaction	Points of Contact
Name	AML	Name	AML			
Adobe Town	700	Stateline	1,250	Adobe Town Salt Wells Sand Wash (Co) ¹	Male migration, female exchange	Haystacks, Alkali, Sand Creek, Powder Wash
Stewart Creek	150	Red Desert ²	790	Stewart Cr Lost Creek Antelope Hills Divide Basin	Male migration, female exchange	Hay Reservoir, Bare ring, Hadsell, Osborne Draw
Lost Creek	70	Red Desert ²	790	Stewart Cr Lost Creek Antelope Hills Divide Basin	Male migration, female exchange	Hay Reservoir, Bare ring, Hadsell, Osborne Draw

Notes:

1 Sand Wash HMA is located entirely in Colorado within the BLM's Craig Field Office. While managed by Colorado BLM, horses from the Sand Wash HMA provide biologically and genetically important interactions with horses from the other HMAs in the metapopulation.

2 Wild horses from the Sweetwater metapopulation (Green Mountain HMA & Crooks Mountain HMA) occasionally mix with wild horses in the Red Desert metapopulation.

In the 30 years since the passage of the Act, the following has occurred in the State of Wyoming:

- The average herd size has increased from 147 to 197.
- The area of public land available for use by horses has increased slightly since 1980.
- The area of private land occupied has decreased from 2.5 million to 846,243.
- The area of private land available for legal use has increased from 0 to 846,243.
- Of the 16 herds, 14 are parts of metapopulations greater than 300.

The same trends that are described for the State of Wyoming also occurred in the RMPPA. In 1971, an estimated 435 horses subject to management under the Act occupied 2,116,095 acres in six areas. Today, an estimated 1,540 horses subject to management under the Act occupy approximately 929,000 acres in three areas.

It should be noted that the BLM has routinely removed excess and stray horses from the range since 1978. During that period, more than 17,000 horses have been removed from Wyoming rangelands and placed through the BLM's Adopt-a-Horse program. And yet the population is still in excess of 6,000 animals, an important indicator that the cornerstone principle of the Act, a thriving ecological balance, is not imperiled by BLM's management of the horses.

POPULATION MANAGEMENT ACTIONS IN THE RMPPA

It should be noted that population management actions in the RMPPA take place as part of a state and national undertaking, which allocates scarce resources and equally scarce space for horses to be removed from the public rangelands so that effective planning and scheduling can take place, bureauwide. No single office controls the fiscal and logistical resources necessary to effect the desired management of horses in its jurisdiction. Instead, each office is part of the BLM-wide wild horse management program. A key part of this program is the identification of a gather cycle for a state. Once established, the gather cycle needs to be adhered to even when this results in gathers taking place in less than ideal conditions within a particular HMA.

AMLs are established to allow for a range of fluctuation in the population and still meet the criteria for a valid AML. In evaluating the AML, a lower limit is identified and then examined to ensure that the particular herd will remain genetically viable if periodically reduced to that level. This is a crucial consideration in many of the smaller herds in the state. Concurrently, the upper limit is evaluated to determine that, under normal climatic conditions, resource damage or other significant conflicts would not be likely to occur if the population were allowed to increase to this level cyclically. The AML will equate to the average population level during a management cycle. AMLs in the Rawlins Field Office do not include the unweaned colts of the year.

Analysis of various gather cycles (occurring outside the scope of this RMP) is occurring as part of the statewide wild horse management strategy. Three- and four-year gather cycles for the state are being evaluated and compared. Cycles longer than 4 years are also being evaluated as part of a management scheme that would employ fertility control to limit population increases.

The fluctuations suggested in Alternative three were determined based on the historically observed rates of increase for the individual herds. As of August 2004, the determination of the gather cycle to be employed in Wyoming is still tentative and awaits further evaluation. When a gather cycle is chosen for implementation in the state, part of the evaluation leading to the choice will be the ability of Wyoming BLM to remain in substantial conformance with the consent decree of August 28, 2003, and all other relevant law and policy. The upper and lower limits would be reevaluated and adjusted to ensure that a thriving ecological balance would be maintained. Because the AMLs were evaluated considering the potential for adverse effects from a 4-year gather cycle and the associated level of population fluctuation, a shorter cycle and lower average population levels would still serve the purposes of the AML determination process.